

REMARKS

Examiner Isaac is thanked for the thorough Search and Examination of the Subject Application for Patent.

Claims 1 and 11 have been amended to emphasize that "all of said layer of resist" is removed "using said polishing pad and chemical mechanical polishing" and that no other means is used to remove a part of the layer of resist. The basis for these amendments to Claims 1 and 11 can be found in the Specification on page 4, lines 14-23; page 10, line 19 to page 11, line 7; and Figs. 4, 5, 8, and 9 of the Drawings.

Claim 8 has been amended to change "said top surface of said substrate" to -- said substrate -- to correct an antecedent basis problem.

Reconsideration of the Rejection of Claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by Jang et al., U.S. Pat. No. 6,365,523 B1, is requested. There are significant differences between the methods described by Claims 1-19 and the invention of Jang et al. which will now be explained.

In the invention of Jang et al. a patterned layer of resist is formed on a layer of dielectric leaving portions of the layer of dielectric exposed; see column 9, lines 56-59; column 12, lines 9-12; column 18, lines 34-38; and Figs. 2, 6, and 13. Part of the dielectric exposed by the patterned layer of resist is then etched away and the remaining resist is stripped; see column 8, line 59 to column 10, line 6; column 12, lines 24-39; column 18, line 55 to column 19, line 4; and Figs. 3, 7, and 14. Next the dielectric is planarized using chemical mechanical polishing.

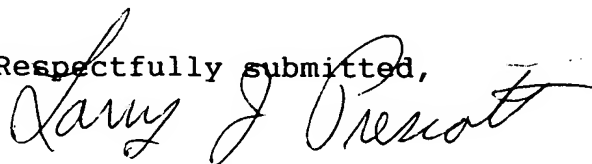
In the methods described by Claims 1-19 a layer of resist is formed over the layer of trench filling dielectric. The entire layer of resist is then removed and the layer of dielectric is planarized using chemical mechanical polishing. The chemical mechanical polishing uses a polishing pad having a hardness of at least Shore "D" 52. The methods of Claims 1-19 do not use a patterned layer of resist, do not remove part of the layer of trench dielectric using methods other than chemical mechanical polishing, and do not require that the resist be stripped prior to the chemical mechanical polishing, as is described in the invention of Jang et al.

The use of a layer of resist which is not patterned, the removal of the layer of resist using chemical mechanical polishing rather than resist stripping, the removal of trench dielectric above the top surface of the substrate using only chemical mechanical polishing without requiring other etching means and patterned resist, and the use of a polishing pad having a hardness of at least Shore "D" 52 make Claims 1-19 significantly different from and patentably distinct from Jang et al. Reconsideration of the Rejection of Claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by Jang et al., and allowance of Claims 1-19, are requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

It is requested that should Examiner Isaac not find that the Claims are now Allowable that the Examiner call the undersigned Agent at (845)-462-5363 to overcome any problems preventing allowance.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please rewrite Claims 1 and 11 as follows.

1. (ONCE AMENDED) A method of planarizing substrates having shallow trench isolation, comprising:

providing a substrate;

forming trenches in said substrate;

depositing a layer of dielectric on said substrate
thereby filling said trenches with said dielectric;

forming a layer of resist on said layer of dielectric;

providing a polishing pad having a hardness of at least Shore "D" 52; and

removing all of said layer of resist and part of said layer of dielectric using said polishing pad and chemical mechanical polishing thereby leaving said trenches filled with trench dielectric and forming a planar surface.

8. (ONCE AMENDED) The method of claim 1 wherein said removing said layer of resist and part of said layer of dielectric removes that part of said layer of dielectric above [said top surface of] said substrate.

11. (ONCE AMENDED) A method of planarizing substrates having shallow trench isolation, comprising:

providing a substrate;

forming a dielectric base on said substrate;

forming trench openings in said dielectric base;

forming trenches in said substrate directly below said trench openings in said dielectric base;

depositing a layer of trench dielectric on said dielectric base thereby filling said trenches with said trench dielectric;

forming a layer of resist on said layer of trench dielectric;

providing a polishing pad having a hardness of at least Shore "D" 52; and

removing all of said layer of resist and part of said layer of trench dielectric using said polishing pad and chemical mechanical polishing thereby leaving trench dielectric in said trenches and forming a planar surface.